

Emergency Telecommunications Service (ETS)

Outputs

- Technical contributions to ATIS Technical Committee PRQC.
- Technical contributions to ITU-T Study Group 9.

In the aftermath of the 2001 terrorist attacks, the Federal Government has become very interested in priority treatment for emergency communications. While the Government Emergency Telecommunications Service (GETS) has served emergency workers well for many years, it is limited to the Public Switched Telephone Network (PSTN) and to the United States. ETS is envisioned as a GETS-like service that will be available internationally and encompass virtually all wireless and wireline communications networks. The types of traffic to be carried include voice, video, database access, text messaging, e-mail, FTP, and web-based services.

The ETS effort at ITS encompasses two projects: Packet-Switched Networks, and Network Survivability and Restoral. For both of these projects, laboratory studies, security analyses, and standards development are used to support Critical Infrastructure Protection (CIP) initiatives. These two projects are funded by the National Communications System (NCS). This work supports NCS in its mission to protect the national security telecommunications infrastructure, and to ensure the responsiveness and availability of essential telecommunications during a crisis.

In the first project, Packet-Switched Networks, ITS develops and verifies ETS Recommendations for International Telecommunication Union's Telecommunication Standardization Sector (ITU-T) Study Group (SG) 9. The major goal of this project is to ensure that future ETS mechanisms and the current GETS service will interoperate over broadband cable television networks in the delivery of voice and multimedia communications.

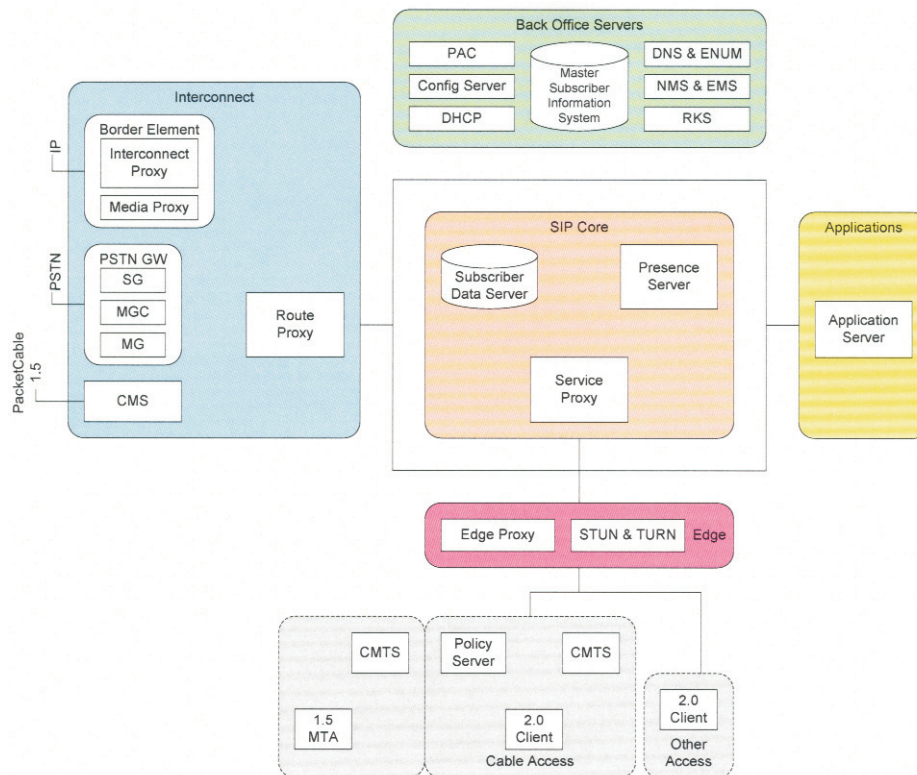


Figure 1. IPCom 2 reference architecture.

The second project, Network Survivability and Restoral, provides ETS expertise relating to priority support and network security for the American National Standards Institute (ANSI)-accredited Performance, Reliability, and Quality of Service Committee, PRQC. Within this project, an ITS engineer served as a co-editor of several ANSI and Alliance for Telecommunications Industry Solutions (ATIS) Standards and Technical Reports. These Standards and Technical Reports provide guidelines, specifications, and requirements for aspects of

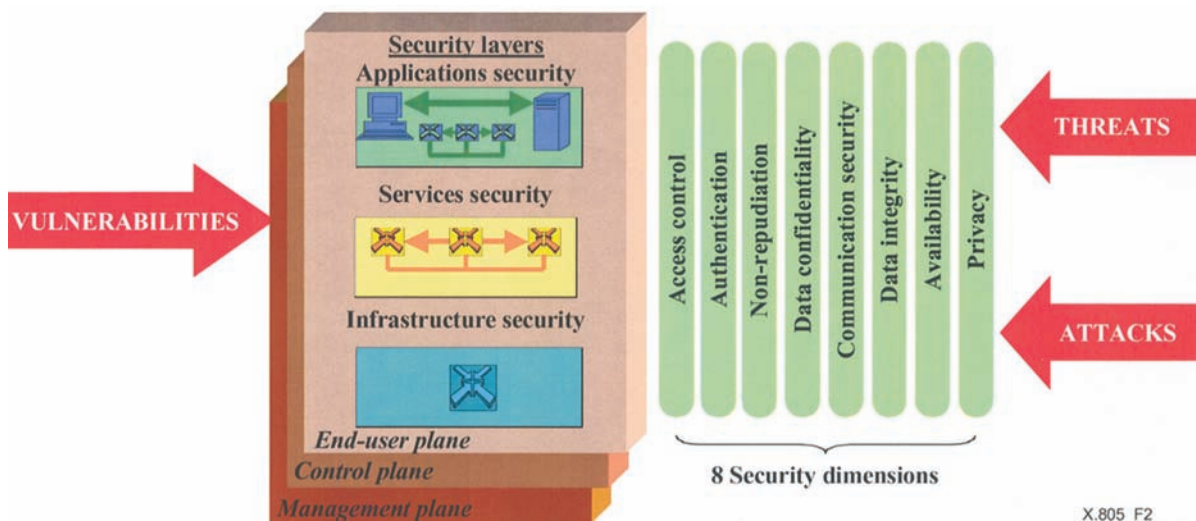


Figure 2. Security planes reflect the different types of network activities.

ETS communications. An ITS Engineer serves as the Chair of PRQC's Security Task Force where he leads security standardization for the Network User Plane.

The standardization work in ITU-T SG 9 is focused on the IPCablecom family of Recommendations. These Recommendations define the protocols and signaling to be used on broadband cable television networks to support telephony, multimedia, and Internet access. The IPCablecom Recommendations have been standardized in ITU-T SG 9, and equipment implementing them is currently in production worldwide. One of the goals of this project is to identify where additions or changes might be needed to support the ETS. This effort also involves work with the Internet Engineering Task Force (IETF), since many of the underlying protocols used in IPCablecom (as well as some of the ETS mechanisms) are under development in the IETF. An ITS engineer served as the Editor and principal author of ITU-T Recommendation J.260 — "Requirements for preferential telecommunications over IPCablecom networks" in SG 9. This Recommendation was approved in January of 2005. An ITS engineer also serves as the Editor of Draft new ITU-T Recommendation J.PREF — "Specifications for preferential telecommunications over IPCablecom networks" in SG 9. This Recommendation will provide specifications to satisfy the requirements set forth in J.260.

Another important study underway at ITS is a series of tests of GETS over IPCablecom networks. The evolution of GETS from a PSTN-only service to one that will interoperate over the wireless, IPCablecom, and Next Generation networks (NGN) is an NCS goal. Another goal of the ETS effort is determining the security needs of ETS in IPCablecom networks.

Figure 1 is a diagram of the IPCablecom2 Architecture. IPCablecom 2 will be the next generation of IPCablecom and we expect to include support for ETS in the first version of IPCablecom2. Figure 2 shows the X.805 diagram with different Security planes reflecting the different types of network activities. Joint effort with the other ATIS groups doing security work will allow us to better define and coordinate this important network security work.

In FY 2006, ITS will continue to address work on the development and standardization of ETS in ATIS PRQC, the IETF, and ITU-T SG 9. The projects will address technologies in the NGN and interactions with the IPCablecom networks. This work on ETS must of necessity be conducted with the help of representatives from network providers and cable television equipment manufacturers, as well as NCS. The work in FY 2006 will focus on priority and security in the NGN ETS as well as GETS compatibility in the IPCablecom networks.

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